

### REMARKS

Claim 1 has been amended to define the claimed fins in a different manner. Support for this amendment can be found in at least page 3, lines 12-15, of the specification. No new matter has been added. Claims 1-8 remain pending in this application.

Claims 1 and 5 are rejected under 35 USC 102(b) on Niederer (US 4,359,785). Claims 4 and 8 are rejected under 35 USC 103(a) on Niederer. Claims 2, 3, 6 and 7 are rejected under 35 USC 103(a) on Niederer in view of Tanamal (US 5,755,811). With the amendment to claim 1, it is respectfully submitted that the rejections of claims 1-8 have been overcome.

Claim 1 recites a hip prosthesis having a shaft and a femoral neck. The shaft has a proximal part to be inserted in a metaphyseal region of the femur. The proximal part has fins that project from its front and rear faces. The fins have a steep medial flank. The width of the fins increases from the distal end to the proximal end of the proximal part. The height of the fins decreases in a lateral direction, perpendicular to the longitudinal axis of the shaft, from the medial edge.

Claim 1 has been amended to recite that the steep medial flank encloses an angle between 5° and 15° with respect to a longitudinal axis of the shaft. An embodiment of this configuration can be seen in FIG. 1, which illustrates angle  $\alpha$  between 5° and 15° enclosed by steep flank 23 and longitudinal axis 27. This aspect of the claimed invention is neither taught nor suggested by Niederer, so the anticipation rejection of claims 1 and 5 should be withdrawn.

In page 2, paragraph 3, of the final rejection, the Examiner indicates that fins extending at an angle of 5-15 degrees with respect to the longitudinal axis of the shaft are considered an obvious design choice. In particular, the Examiner states that:

The level of ordinary skill in the art of hip prosthesis design and use is high, and thus the specific angle of the angled fin of Niederer would have been readily apparent and obvious in view of numerous design considerations for hip prosthesis.

Applicant respectfully disagrees. The claimed configuration would not have been obvious to one of skill in the art in light of Niederer, because Niederer teaches away from the claimed configuration.

For instance, the prosthesis of Niederer has a completely different technical intention than the claimed prosthesis. The Niederer prosthesis is to be anchored in the bone by means of cement ("the hip joint prosthesis has a shank 2 for anchoring in a cement bed," column 2, lines 38 to 39). One of the problems that may occur with a prosthesis of this type is that the prosthesis sinks further into the bone if it is not properly supported. To address this problem, one of the technical intentions of the prosthesis of Niederer is to provide the prosthesis with a design that prevents it from sinking into the bone cement. Accordingly, Niederer proposes to arrange a collar with a steep flank on the prosthesis which prevents it from sinking into the bone cement ("As such, the collar is additionally supported on the edge of the cement quiver within the bone and prevents the shank from sinking into the bone cement," column 1, lines 35 to 38; "Moreover, as is the case with a collar of a convention prosthesis-good support of the prosthesis in the cement is made possible," column 2, lines 17 to 19).

In his exemplary embodiment, Niederer proposes a steep flank which includes an angle of about 50° with the longitudinal axis. Considering the technical intention of Niederer, it is clear to the person of ordinary skill in the art that, due to the force transmission to the bone cement, the flank must not be parallel to the direction of force transmission (which, in this case, is the longitudinal axis of the prosthesis). If the steep flank were parallel to the direction of force transmission, the prosthesis would sink into the bone cement as if the steep flank were not there. The person of ordinary skill in the art would also recognize that the force transmission to the bone cement is better if the steep flank includes a large angle with the direction of force transmission. From the exemplary embodiment of Niederer, which discloses an angle of about 50° between the steep flank and the longitudinal axis, a person of ordinary skill in the art would never consider changing this angle to a substantially smaller angle because this would contradict the technical intention of Niederer. To improve the force transmission to the bone cement, the

person of ordinary skill in the art possibly would consider an angle of 60° or 70°, but never an angle of less than 20°.

In contrast, the technical intention underlying the claimed prosthesis is completely different. The claimed fins serve to improve force transmission in a medial direction in which maximum loads have to be transmitted. When the claimed prosthesis is inserted into the femur, the fins cut into the bone substance and compress it. This provides for maximum force transmission in the medial direction. The height of the fins, which decreases in a lateral direction, ensures that the bone does not burst when the prosthesis is inserted. The claimed fins have nothing to do with preventing the prosthesis from sinking into the bone under load. To the contrary, as illustrated in the disclosed embodiment of the prosthesis in the present application, the function of preventing the prosthesis from sinking into the bone is achieved by the ribs located on the distal portion of the prosthesis which have an increasing height. These ribs are different from the claimed fins located on the proximal portion of the prosthesis, and serve different technical intentions.

In summary, it is the clear teaching of Niederer to design a large angle between the steep flank and the longitudinal axis for better force transmission to the bone cement. This teaching is opposite to an angle of 5° and 15° between the steep flank and the longitudinal axis. Niederer does not provide any teaching or suggestion with respect to the technical problem of providing good force transmission in a medial direction without bursting the bone as provided by the claimed prosthesis.

Accordingly, because Niederer does not disclose, teach or suggest all of the limitations of amended claim 1, it is respectfully submitted that the rejection of claim 1 (and claims 2-8, which depend from claim 1) under 35 U.S.C. § 103(a) on Niederer has been overcome.

In view of the above, early action allowing claims 1-8 is solicited.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in

connection with the filing of this document to **Deposit Account No. 03-1952** referencing Docket No. **246472007600**.

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